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June 1, 2019

San Diego Regional Water Quality Control Board
2375 Northside Drive, Suite 100
San Diego, CA 92108
Submitted electronically: sandiego@waterboards.ca.gov

Subject: Comment – Proposed Basin Plan Amendment to Incorporate Biological Objectives, PIN: CW-825417
Attn: Chad Loflen

Dear Mr. Loflen:

On behalf of the California Stormwater Quality Association (CASQA), thank you for the opportunity to provide comments on the proposed Basin Plan Amendment to the Water Quality Control Plan for the San Diego Basin to Establish Biological Water Quality Objectives for Perennial and Seasonal Streams (Proposed BPA). CASQA is a nonprofit corporation with approximately 2,000 members throughout California and is dedicated to the advancement of stormwater quality management through collaboration, education, implementation guidance, regulatory review, and scientific assessment. Our membership comprises a diverse range of stormwater quality management organizations and individuals, including cities, counties, special districts, industries, and consulting firms.

CASQA understands that the Proposed BPA was developed, in part, as a priority project as identified in the *Prioritized List of Suggested Basin Plan Revisions Developed through the 2014 Basin Plan Review* (Issue 1). As described within the document, "[t]he Basin Plan should be amended to incorporate a narrative biological objective for water bodies in the San Diego Region such as: Waters of the State shall be of sufficient quality to support native aquatic species without detrimental changes in the resident biological communities. The San Diego Water Board should establish numerical measures by which to interpret the narrative objective." It is CASQA's understanding that the San Diego Regional Water Quality Control Board's (Regional Water Board's) goal and intent of adopting the Stream Biological Objective is "to utilize biological assessment ('bioassessment') to better protect and restore waters by facilitating a broader evaluation of the effects of stressors that extends beyond the existing regulatory convention of analyzing for individual chemicals." CASQA understands this need and supports the protection of biological integrity as a part of the overall regulatory framework.

Primary Issues and Recommendation

As biological objectives have not yet been established within California, the Proposed BPA, including the proposed Stream Biological Objective, has the potential to be precedent setting and is therefore of great interest to stormwater permittees throughout the state. Therefore, CASQA is concerned with the significant number of fundamental and material issues with the Proposed BPA. Process issues include:

- **Deviation from the Statewide Process to Develop Similar Objectives:** The Proposed BPA does not provide justification for (1) deviating from the State Water Resource Control Board's (State Water Board) Statewide Biostimulatory Substances Objective and Program To Implement Biological Integrity (Biostimulatory/Biointegrity Process) and (2) potentially adopting a water quality objective that may be fundamentally different, if not in conflict with, the approach being developed by the State Water Board;

- **Lack of Consideration for the Work Developed Through the Biostimulatory/Biointegrity Process[1]:** The Proposed BPA does not account for or address the years of scientific and technical advancements, the tools that have been established, or the critical regulatory, scientific, and technical issues that have been identified as requiring further development before a proposed objective can be developed by the Biointegrity/Biostimulatory Process;
- **Lack of Consideration of Approaches from Other States:** The Proposed BPA does not consider the various alternatives adopted by other states for addressing biological criteria[2], including the extensive use of narrative objectives with numeric guidance (nineteen states) as well as how other states addressed similar critical scientific, regulatory, and technical issues;
- **Lack of a Regulatory Framework for Implementation:** The Proposed BPA does not address how the Stream Biological Objective should be incorporated into the regulatory framework so that it is reasonably achievable and can be integrated into existing programs and priorities. Further, the BPA does not consider how the lack of a regulatory framework may jeopardize a permittee's ability to reasonably comply with permit provisions; and
- **Significant Disconnect Between the Proposed BPA (Chapter 4) and the Draft Staff Report:** As further described in the detailed comments, there is an apparent disconnect between the approach described within the Draft Staff Report and Chapter 4 of the Proposed BPA. This disconnect is material in that it is unclear what is being proposed by the Regional Water Board.
- **Lack of Compliance with the Porter Cologne Water Quality Control Act (Porter-Cologne):** When adopting new water quality objectives, the Regional Water Board must fully comply with the mandates of Porter-Cologne, and Basin Plan Amendments must clearly explain how the new objectives will be applied and implemented by the Regional Water Board through its various permitting authorities.

Although these and other related issues are further described below, *CASQA's overarching recommendation is that the Regional Water Board take the comments and questions received as a part of the Proposed BPA comment period and convene a stakeholder process with the State Water Board and other interested parties so that the issues and concerns can be fully vetted and the regulatory framework and expectations established so that they are achievable, implementable, and understandable.*

Such processes have been successfully implemented before, and are especially valuable where new and unique objectives are being established. For example, the State Water Board used a large stakeholder-based approach to develop sediment quality objectives (SQOs) and is using a similar approach for the Biointegrity/Biostimulatory Process. These efforts result in developing advanced solutions to very complex scientific, regulatory, and technical challenges. In addition to developing a more robust objective, these processes result is significant support from many stakeholders, including permittees, environmental nonprofits, and regulators alike.

Summary of Major Comments

CASQA appreciates that establishing biological objectives and preparing an associated implementation plan is multifaceted and complex. Our comments and recommendations have been developed considering the complexity associated with establishing and achieving biological objectives and the need for clear implementation requirements.

[1] CASQA is an active participant as a formal stakeholder in the State Water Board's process, which is currently contemplating the development of a statewide narrative water quality objective with numeric translators or thresholds to be part of an update to the Inland Surface Waters and Enclosed Bays and Estuaries (ISWEBE) Plan. Through this process, CASQA has been working with State Water Board staff and other stakeholders in contemplating, vetting, and identifying critical issues that need to be resolved prior to adoption as well as implementation options for addressing these critical issues.

[2] https://www.epa.gov/wqc/information-bioassessment-and-biocriteria-programs-streams-and-wadeable-rivers

CASQA's overarching concerns with the Proposed BPA are summarized below with additional detail provided within the comments.

- The permittees[3] have numerous outstanding questions about the framework that the Proposed BPA envisions for the application, assessment, and implementation of the Stream Biological Objective and the resulting decision-making process and regulatory requirements. In order to provide necessary clarity, it is recommended that the Regional Water Board develop a flow chart/framework. (Supported by Comment #1)
- The Proposed BPA proposes the adoption of a numeric biological objective that would apply to all San Diego Region waterbodies with aquatic life beneficial uses. CASQA is concerned that this broad application of a numeric objective does not properly consider differing types of waterbodies and their ability to reasonably achieve the objective. Rather than adopting a numeric objective, CASQA recommends that the Regional Water Board consider adoption of a narrative objective that can then be interpreted based on site specific conditions of the various waterbodies. Or, to the extent that the Regional Water Board decides not to adopt a narrative objective, the Regional Water Board should consider restricting application of the Stream Biological Objective to those waterbodies that meet reference condition or have a realistic chance of meeting reference condition. (Supported by Comment #2)
- Due to the strict sampling requirements associated with obtaining a representative CSCI score and the scour and disruption to the biological community that can occur during storm events, application of the Stream Biological Objective should be further restricted and only apply between March 1 and August 15 and not during wet weather events or the three weeks following a storm event. (Supported by Comment #3)
- The Stream Biological Objective does not appear to fully consider the extensive body of work and critical issues that have been developed and identified through the State Water Board's Biostimulatory/Biointegrity Process. CASQA strongly believes that, in order to achieve the goals and intent of the project as stated in the Draft Staff Report[4] and establish a biological objective that can be reasonably achieved within the San Diego Region, an alternative biological objective should be considered (a narrative objective or a range rather than a "bright line" single value) and an alternative implementation approach should be considered. (Supported by Comments #2, #6, #7)
- The technical and policy analyses within the Draft Staff Report (Appendix 2) do not meet the California Water Code (CWC) §13241/13242 requirements and, thus, (a) do not demonstrate that the water quality condition (i.e., the 0.79 CSCI score) could reasonably be achieved from the coordinated control of all factors that affect water quality in the area, and (b) do not include the description of the specific actions that are necessary/required from each of the permittees and the commensurate timeline(s) it would take to achieve the proposed Stream Biological Objective . (Supported by Comment #4)
- There appears to be a disconnect between the approach and language within the Draft Staff Report (Appendix 2) and the approach and language within the Proposed BPA Chapter 4: Implementation. As a result, the permittees have numerous questions and concerns as to how the Stream Biological Objective would be implemented and are unclear as to the Regional Water Board's expectations. The language within Chapter 4 needs to be clarified so that the permittees understand how the Stream Biological Objective will be applied to the range of waterbodies within the San Diego Region, what specific implementation actions are required of the stormwater permittees, what the timelines are for the implementation actions and achievement of the Stream Biological Objective, and what the compliance determination pathways are so

[3] Although the Proposed BPA uses the terms permittees and dischargers to refer to the Phase I Municipal Stormwater Permittees, for the purposes of this comment letter, the term "permittees" is used.

[4] The *Draft Staff Report* for the Biological Objectives for the San Diego Region consists of the body of the document as well as *Appendix 1: Stream Biological Objective California Stream Condition Index Documentation* and *Appendix 2: Draft Substitute Environmental Document*.

that the permittees understand and can meet the requirements and protect water quality. (Supported by Comments #5, #9, #10)

- CASQA has a number of technical concerns and requested definitions/clarifications for the Proposed BPA. (Supported by Comments #8, #11)

Comment #1. The Regional Water Board should develop a flow chart / framework that clearly outlines how the Proposed BPA will be applied, assessed, and implemented and what the corresponding regulatory requirements are.

During the State Water Board's Biostimulatory/Biointegrity Process, one of the critical components that was identified by the Stakeholder Advisory Group was the need to develop a framework that clearly identified the assessment and implementation decision making process and the results of those decisions within the regulatory framework. Although the Stakeholder Advisory Group flow chart/framework is still draft, it assisted in a better understanding and communication amongst the parties as it related to:

- How assessment tools would be used, and results interpreted;
- How decision-making processes would occur;
- How implementation actions were related/built on each other; and
- What the follow up regulatory actions would be.

Given the confusion and sheer number or questions that remain about the functionality of Chapter 4 of the Proposed BPA, CASQA strongly recommends that the Regional Water Board develop a similar flowchart / framework.

CASQA Recommendation:

- *Develop a flowchart/framework that graphically shows how the Chapter 4 decision making processes will occur as well as how the various components are interconnected and will be implemented.*

Comment #2. Given the complexity of biological objectives, the range of stream conditions within the San Diego Region, and holistic watershed-based approaches that will need to be undertaken in order to improve stream conditions where needed, the Regional Water Board should consider an alternative approach for the establishment and implementation of the Stream Biological Objective for the San Diego Region.

CASQA is actively working with State Water Board staff, the Southern California Coastal Water Research Project (SCCWRP) staff (technical consultant to the State Water Board), and the regulated community in contemplating, vetting, and identifying an approach for establishing biological objectives, as well as identifying implementation alternatives for addressing a wide range of associated issues. Based on the knowledge that CASQA has gained through the State Water Board's process, CASQA believes strongly that the Regional Water Board should consider an alternative approach to adopting a widely applicable numeric biological objective. CASQA firmly believes that the Regional Water Board can still meet its intended goals as outlined within the Draft Staff Report through an alternative approach.

The Regional Water Board identifies the following goals and intent of the establishment of the Stream Biological Objective as follows[5] [emphasis added]:

1) The goals and intent of the project are to protect and restore the biological condition of receiving waters. Protection includes 1) ensuring those waters that are meeting objectives do not degrade, resulting in loss of Beneficial Use(s) and impairment, and 2) **ensuring those waters with some form of existing impairment do not further degrade** and lose additional Beneficial Use(s).

[5] Draft Staff Report, Section 5.1 Introduction, page 73

2) Where existing historic activities, such as stream channel hardening, may already cause degradation of the biological condition of receiving waters subject to a discharge(s) today, **these historic activities do not preclude discharges from meeting other water quality objectives for chemistry and toxicity**. This consideration is important since discharges do extend downstream beyond the initial discharge point to other waterbodies, such as estuaries, bays, reservoirs, and the ocean.

3) Restoration of waters where long-term historic land use decisions have restricted the ability for current discharges to meet the Stream Biological Objective will require **long-term incremental improvement** through existing implementation programs (e.g. Section 5.3.3 Phase I Storm Water, Section 5.5).

One alternative for consideration is to adopt a narrative objective and then include in the implementation plan how the narrative objective should be interpreted (similar to the approach utilized in the Sediment Quality Objectives adopted by the State Water Board). However, if the Regional Water Board proceeds with adopting a numeric biological objective such as the proposed Stream Biological Objective, CASQA recommends that application of the biological objective apply first to waterbodies that meet reference condition or have a high likelihood of achieving reference condition. Application of the objective to other waterbodies should only occur after careful evaluation and consideration to determine if other waterbodies have the ability to achieve compliance with the numeric objective. For example, the numeric biological objective could apply to waterbodies through a phased approach, as described in the table below.

<table>
<tr><th></th><th>Phase I</th><th>Phase II (with additional phases as needed)</th></tr>
<tr><td rowspan="4">Applicable Waters</td><td>Perennial, Wadeable Streams</td><td rowspan="3">Continue Phase I</td></tr>
<tr><td>High quality waterbodies (meeting reference)</td></tr>
<tr><td>High quality waterbodies with a high likelihood of being able to meet reference</td></tr>
<tr><td>---</td><td>Consideration of additional water body types[6]</td></tr>
<tr><td rowspan="4">Objective Applied</td><td>High quality waterbodies (meeting reference) – 0.79 CSCI score</td><td rowspan="3">Continue Phase I</td></tr>
<tr><td>High quality waterbodies with a high likelihood of being able to meet reference – 0.79 CSCI score</td></tr>
<tr><td>Waterbodies not meeting reference – maintain current (baseline) condition, CSCI score</td></tr>
<tr><td>---</td><td>Consideration of establishment of thresholds/ranges for waterbodies not meeting reference[7]</td></tr>
<tr><td rowspan="2">Implementation Focus</td><td>Protection of high quality waterbodies</td><td rowspan="2"></td></tr>
<tr><td>Protection of high quality waterbodies with a high likelihood of being able to meet reference</td></tr>
</table>

[6] See also Comment #9 [Seasonal Streams] & Comment #5 [Channels in Developed Landscapes]

[7] See also Comment #5 [Channels in Developed Landscapes]

	Phase I	Phase II (with additional phases as needed)
(Prioritization of Management Actions)	Waterbodies not meeting reference – maintain current (baseline) condition	Continue Phase I
	Volunteer/incentives for restoration activities to achieve incremental improvement	
		Consideration of role and approach for watershed-based assessment and restoration[8]

CASQA Recommendation:

- *The Regional Water Board should consider an alternative, proposed approach as described above (or some variation thereof) such that the key issues can be resolved, and unintended consequences and/or immediate non-compliance of an unattainable objective can be avoided. CASQA would welcome additional conversations with Regional Water Board staff to discuss viable alternatives to achieve Regional Water Board's goals, as well as address the concerns and uncertainty within the regulated community.*

Comment #3. The Stream Biological Objective should distinguish between dry and wet weather conditions and clearly identify when the objective applies.

CASQA has concerns that the Stream Biological Objective does not properly address the differences between dry weather conditions and storm events and the appropriate application of the Stream Biological Objective during those two very distinct flow conditions. As proposed, the Stream Biological Objective does not account for the differences between wet and dry weather conditions and/or specify when the Objective applies. The variable nature of stormwater runoff presents unique challenges in accurately characterizing water quality and potential receiving water impacts, such as scour, that needs to be specifically considered in the applicability, implementation and assessment provisions for the Stream Biological Objective.

In addition, the Stream Biological Objective was developed based on monitoring data that was collected in accordance with required sampling protocols, which are focused on conditions that are not influenced by storm runoff, to try to ensure that the composition of the biological community is intact. As a result, the Stream Biological Objective should not apply during wet weather events and the three weeks after the storm event. This is critical because there is no evidence that the proposed Stream Biological Objective can be attained outside of the recommended sampling period or during wet weather events.

CASQA Recommendation:

- *Revise Chapter 3 of the Proposed BPA to clearly identify that the Stream Biological Objective is only applicable between March 1 and August 15 and not during wet weather events or the three weeks following a storm event.*

Comment #4. California Water Code (CWC) §13241/13242 requirements must be fully addressed within the supporting documentation.

As a part of the water quality objective adoption process, the Regional Water Board must comply with CWC §13241/13242 and should strongly consider the United States Environmental Protection Agency (EPA) water quality standards regulations described in 40 CFR 131.10(g). As described below, CASQA is concerned that the §13241/13242 requirements have not been fully addressed, especially the analysis necessary for the Regional Water

[8] See also Comment #7 [Watershed-based Assessment and Implementation]

Board to consider the factor specified in CWC §13241(c), which states as follows: "[w]ater quality conditions that could reasonably be achieved from the coordinated control of all factors which affect water quality in the area."

Further, when adopting water quality objectives, the Regional Water Board is also required to adopt a program of implementation that includes "[a] description of the nature of actions which are necessary to achieve the objectives, including recommendations for appropriate action by any entity, public or private." (CWC 13242(a).) The program of implementation must also include "a time schedule for the actions to be taken."

Each of the concerns are further described below.

CWC §13241

CWC §13241 states that:

> Each regional board shall establish such water quality objectives in water quality control plans as in its judgment will ensure the reasonable protection of beneficial uses and the prevention of nuisance; however, it is recognized that it may be possible for the quality of water to be changed to some degree without unreasonably affecting beneficial uses. Factors to be considered by a regional board in establishing water quality objectives shall include, but not necessarily be limited to, all of the following:
>
> (a) Past, present, and probable future beneficial uses of water.
>
> (b) Environmental characteristics of the hydrologic unit under consideration, including the quality of water available thereto.
>
> (c) Water quality conditions that could reasonably be achieved from the coordinated control of all factors which affect water quality in the area.
>
> (d) Economic considerations.
>
> (e) The need for housing within the region.
>
> (f) The need to develop and use recycled water.

Although the Draft Staff Report (Appendix 2) claims to address the factors for consideration as required by CWC §13241 in Sections 1.1.6 and 1.9, in fact, the document fails to include sufficient information to address the factors described above, especially CWC §13241 c)[9]. Rather, the analysis is a brief, two-sentence statement on page 114, which states:

> "In the San Diego Region, almost 30 percent of the stream-miles are estimated to be similar-to-reference and in good condition based on probabilistic surveys (see section 1.3.1). While many of these sites occur within minimally disturbed areas, other sites are located in areas where discharges associated with municipal, construction, and industrial storm water, irrigated agriculture, and other anthropogenic activities occur (Figure 3)."

In short, the Draft Staff Report finds that, because 30 percent of the stream miles are estimated to be similar to reference, and a small portion of those sites are in areas influenced by anthropogenic activities, then by extension the Stream Biological Objective of 0.79 CSCI score, which is associated with unaltered reference, must be achievable throughout the entirety of the San Diego Region. This simple statement fails to properly consider how the 0.79 CSCI score will be achieved throughout the region, and in all waterbodies to which the objective would apply. It also fails to consider if achieving this score is reasonable through a program of implementation on controllable factors. Moreover, the statement provided in the Draft Staff Report does not consider historic land use development to meet many other public health and safety issues such as adequate water supply availability and flood control. Accordingly, the Draft Staff Report is incomplete in its analysis, and does not meet the mandates of CWC §13241.

[9] Although CASQA's comment is primarily focused on §13241(c), it is CASQA's position that the analysis did not fully consider factors (a)-(f).

For cities, counties, districts, and other regulated entities, adoption of the objective without proper consideration will result in the need for all entities to comply with this objective even though the Stream Biological Objective may not be reasonably achievable in ALL waterbodies. Moreover, as noted in Comment #7, the State Water Board's Biostimulatory/Biointegrity Process has produced, through coordination with SCCWRP, the Channel in Developed Landscapes modelling tool that indicates that a reference-based objective may not be achievable in all waterbodies due to landscape constraints.

Another fundamental concern with the CWC §13241(c) discussion in the Draft Staff Report is that it does not identify the types of control measures that would be required for the waterbodies in question to achieve the Stream Biological Objective, and the Draft Staff Report does not evaluate these measures to determine if implementation thereof would, in fact, be reasonable/feasible for all waterbodies and result in attainment of the Stream Biological Objective.

At a minimum, the CWC §13241(c) analysis should include the following:

- An analysis based on the steps below as they apply to dry weather conditions (when there is enough flow to support representative monitoring) that have not been impacted by a storm event. It is assumed that there would not be a similar, separate analysis for wet weather conditions since the proposed Stream Biological Objective does not apply to ephemeral streams or during conditions that are influenced by storm events. Thus, the analysis should clearly identify that it is focused on dry weather only due to the applicability of the Stream Biological Objective. (See Comment #3)
- An analysis to determine if the proposed Stream Biological Objective is currently achieved in all waterbodies (within a full range of conditions from reference-based waterbodies to waterbodies in fully developed landscapes).
- If the analysis identifies waterbodies where the proposed Stream Biological Objective is not achieved, what are the types of actions and/or controls that would be <u>required</u> of the permittees (per sector), as a part of the regulatory framework.
- An analysis to demonstrate that the necessary controls to achieve the proposed Stream Biological Objective are reasonable and feasible (proven, cost-effective, affordable, etc.).
- For those waterbodies where the proposed Stream Biological Objective is not currently achieved, an analysis to determine if the proposed Stream Biological Objective could reasonably be achieved in all waterbodies through the implementation of coordinated controls on all factors that affect water quality in that waterbody.
- As a result of this analysis, identification of the waterbodies that are unable to achieve the proposed Stream Biological Objective , and perhaps an alternative water quality condition that can be reasonably achieved.

In order to fully understand the impact of the proposed Stream Biological Objective throughout the region, and to determine if the Stream Biological Objective provides for reasonable protection of beneficial uses, the analysis should include case studies covering the range of waterbodies within the region and where the types of proposed, required controls have achieved the proposed Stream Biological Objective. Ultimately, the results of the CWC §13241 analysis needs to inform the program of implementation that is required pursuant to CWC §13242.

<u>CWC §13242</u>

CWC §13242 states that:

> The program of implementation for achieving water quality objectives shall include, but not be limited to:
>
> (a) A description of the nature of actions, which are necessary to achieve the objectives, including recommendations for appropriate action by any entity, public or private.
>
> (b) A time schedule for the actions to be taken.
>
> (c) A description of surveillance to be undertaken to determine compliance with objectives.

Although the Draft Staff Report claims to address CWC §13242 in Section 1.9.2, this section generally refers to Chapter 4 of the Proposed BPA (Implementation Plan) and Section 5 of the Staff Report and states that "the program of implementing the proposed water quality objective is through assessment in integrated reporting, monitoring to prevent antidegradation, establishment or modification of monitoring and assessment in NPDES permits and WDRs, CWA §401 Certification, and TMDLs." Thus, according to CWC §13242, the foundation of the implementation program seems to be primarily focused on monitoring and reporting; however, there is no actual description of the nature of actions that would be imposed on the permittees to achieve compliance with the proposed objective, and no time schedule is provided for implementation of specific actions that need to be taken by the regulated entities. In fact, the Time Schedule for Implementation of Stream Biological Objective (Table TBD, Chapter 4, pg. 3), does not identify any actions beyond a 5-year timeframe for the permittees.

Issues that CASQA has identified within Chapter 4 of the Proposed BPA (Implementation Plan) include the following:

- Section II. Time Schedule for Implementation of the Stream Biological Objective
    - Although this section states that it outlines the time schedule for the implementation of the proposed Stream Biological Objective, this section and Table TBD, does not include <u>any</u> time schedules for the implementation of the control actions or time necessary to meet the proposed Stream Biological Objective (e.g., for Permitting, Regional Phase I Permit). This section must include the time necessary for implementation of the actions required pursuant to the permits/WDRs and how much time is expected to achieve the proposed Stream Biological Objective within all applicable waterbodies.
    - Within Table TBD it indicates that the Regional Water Board will be implementing the General Monitoring and Assessment actions; however, within Section III, these requirements also seem to apply to the permittees. In addition, in section V.B.3, there are specific monitoring requirements for the permittees that are not included within the table. This should be reconciled within Table TBD along with the requisite timeframes for implementation.
    - Within the Permitting section V.B.3, there is discussion of the minimum permit requirements for discharges that pose a probable threat; however, it is not clear what the specific control actions are that will be required. For the purposes of satisfying the requirements of CWC §13242, the specific implementation actions and controls that the permittees will have to take, and implement should be identified along with the timeframe for implementation in order to achieve compliance with the proposed Stream Biological Objective.

As a result, consistent with CWC §13242, Chapter 4 of the Proposed BPA must be revised such that it recognizes the results of the CWC §13241 analysis and describes the nature of actions that need to be taken by the appropriate party, the time schedule for those actions, and the description of the requisite monitoring.

To conduct this analysis, EPA recommends the following: (a) the identification of current and expected conditions of the water body, (b) the evaluation of the effectiveness of best management practices, including treatment options and (c) the use of water quality models, load calculations and other predictive tools. For waterbodies that cannot meet the desired condition (for example, the unaltered reference condition of 0.79 CSCI score), EPA recommends the establishment of different beneficial use descriptions and categories which reflect the highest attainable use for the category of water body.

CASQA Recommendation:

- *The Draft Staff Report must include an analysis of the CWC §13241 factors, and in particular an evaluation with respect to sub-section (c), to demonstrate that the proposed numeric water quality objective for perennial and seasonal streams can be reasonably achieved from the coordinated control of all factors which affect water quality in the area.*

- *The Proposed BPA must include a program of implementation in Chapter 4 that complies with CWC §13242 such that it is clear what specific actions are required of what entities/agencies, and a time schedule for taking actions and for achieving the proposed Stream Biological Objective (see also the issues bulleted above related to the time schedule for implementation).*

Comment #5. The Proposed BPA does not recognize that Permittees will be in Immediate Non-Compliance once the Stream Biological Objective is Approved and Effective.

According to Chapter 4 of the Proposed BPA (Implementation Plan – Table TBD: Time Schedule for Implementation of Stream Biological Objectives), the implementation actions and compliance dates for Regional Phase I MS4 Permittees are:

- Within 5 years of the effective date of the Stream Biological Objective, the San Diego Water Board will modify the Phase I MS4 Permit to include implementation requirements to incorporate the CSCI and Stream Biological Objectives; and
- Phase I MS4 Permittees may elect to comply with the Stream Biological Objective using the "alternative compliance pathway option." However, 12 months prior to submittal of the report of waste discharge (ROWD), Phase I MS4 Permittees must notify the Regional Water Board if they wish to utilize or update an alternative compliance pathway option to incorporate numeric goals, water quality improvement strategies, and schedules for the Stream Biological Objective.

Since the Proposed BPA indicates that the Stream Biological Objective would be applied as a receiving water limitation (if adopted) and the Staff Report includes a finding that Regional Phase I MS4 Permittees are pre-determined to be a probable threat (thus causing or contributing to a decreased CSCI score) (Comment #11), Regional Phase I MS4 Permittees that discharge to water bodies with CSCI scores less than 0.79 will be immediately out of compliance with the Receiving Water Limitations permit requirements and in jeopardy of third party lawsuits if the Stream Biological Objective is adopted as proposed.

While CASQA does not believe that this is the intent of the Regional Water Board, language must be modified so that immediate non-compliance is not an unintended consequence. Thus, to the extent that the Regional Water Board moves forward to adopt the Stream Biological Objective as proposed, CASQA recommends changes to avoid immediate non-compliance by permittees.

CASQA Recommendation:

- *Delete the determination that the Phase I permittees represent a probable threat to the Stream Biological Objective.*
- *The Regional Water Board should not universally apply the Stream Biological Objective as a receiving water limitation. Instead, the Stream Biological Objective should be addressed through the Discharge Limitations (consistent with B.1 of Chapter 4 of the BPA).*

Comment #6. The Proposed BPA should consider the body of work resulting from the State Water Board's process for the development of a Biostimulatory Substances Objective and Program to Implement Biological Integrity (Biostimulatory/Biointegrity Process).

As noted above, for the last several years, CASQA has been actively engaged as a formal stakeholder in the discussions / development of the Biostimulatory/Biointegrity Process.[10] This process was developed because it is the State Water Board's first attempt to define biological objectives for California. Further, the stakeholder process was created due to the complexity in defining the biological conditions in the diverse ecoregions throughout the state, and to evaluate the range of regulatory and policy alternatives for consideration. As one would expect, this transparent

[10] https://www.waterboards.ca.gov/water_issues/programs/biostimulatory_substances_biointegrity/

and inclusive stakeholder-based process has identified a number of issues that should be addressed when adopting biological objectives. Notably, CASQA has been working with State Water Board staff and the regulated community as a whole in contemplating, vetting, and identifying possible approaches and alternatives for addressing a wide range of associated issues.

Some of the key scientific reports and manuscripts that have been developed through the State Water Board's process should also be considered within the San Diego Region's process. These key documents include the following:

- Sutula M., Mazor R. and Theroux S. et al. authors. October 2018 Draft Version. Scientific Bases for Assessment, Prevention, and Management of Biostimulatory Impacts in California Wadeable Streams. Southern California Coastal Water Research Project Technical Report Number 1048
- Beck, M. W., RD Mazor, S Johnson, K Wisenbaker, J Westfall, PR Ode, R Hill, C Loflen, M Sutula, ED Stein. In Review. Prioritizing management goals for stream biological integrity within the developed landscape context. Submitted to Freshwater Science
- Paul M.J., Jessup B., Brown L., Carter C., Cantonati M., Charles D.F., Gerritsen J., Herbst D., Howard J., Isham B., Lowe R., Mazor R., Mendez P., O'Dowd A., Olson J., Pan Y., Rehn A., Spaulding S., Sutula M., Stancheva Hristova R., and Theroux S. In Prep. Development of benthic macroinvertebrate and algal biological condition models for California streams. For submission for Freshwater Science.

Other policy and implementation considerations that also need to be considered by the Regional Water Board in setting biological objectives specific to the San Diego Region include the following:[11]

- Use of a narrative objective rather than a specific numeric objective.
- Phased implementation that first focuses on water bodies that meet or are highly likely to meet the proposed biological objective.
- Establishment of indicators and thresholds or ranges that are appropriate for California streams, and those within the San Diego Region.
- Thresholds and implementation approaches that are appropriate for constrained channels.
- Process for addressing multiple causal assessment indicators.
- Watershed-based causal assessment and source control options.
- Watershed-based credit trading.

CASQA Recommendation:

- *Although the State Water Board process to develop Biostimulatory/Biointegrity Process is still underway, the Regional Water Board should consider the body of work that has been completed and vetted through scientific panels and stakeholder groups over the past few years as well as the range of outstanding issues and alternatives (see the bulleted list above).*

Comment #7. The Proposed BPA should recognize the inherent limitations of water body segments in highly developed landscapes and utilize SCCWRP's Channel in Developed Landscapes Model to assist in defining the expected biological condition.

One of the key challenges and discussion items within the Stakeholder Advisory Group in the State Water Board's Biostimulatory/Biointegrity Process is the issue of channels in developed landscapes and if / how biological objectives should be applied and assessment results interpreted within heavily modified water body segments. To assist in evaluating potential approaches, SCCWRP developed a statewide landscape model and manuscript

[11] Biostimulatory/Biointegrity Stakeholder Group Meeting, October 26, 2018
https://www.waterboards.ca.gov/water_issues/programs/biostimulatory_substances_biointegrity/stakeholder_advisory/docs/BioStimulatory_BioIntegrity_Update_Fall_2018-draft4.pdf

[SCCWRP Manuscript] "Prioritizing management goals for stream biological integrity within the developed landscape context."[12] The Channel in Developed Landscapes Model (Model) "estimates ranges of likely scores for a macroinvertebrate-based index that are typical at a site for the observed level of landscape alteration."

Some of the key findings from this work effort include the following:

- "Stream management goals for biological integrity may be difficult to achieve in developed landscapes where channel modification and other factors impose constraints on in-stream conditions." (pg 2)
- "…achieving a reference condition of biological integrity (i.e., having structure and function comparable to natural habitat for the same region, Karr et al. 1986) may be challenging if site-specific conditions place limits on spatial and temporal scales that can be effectively managed (Chessman and Royal 2004, Chessman 2014)." (pg 3)
- "The landscape model can be used characterize the extent of biologically constrained channels in urban and agricultural landscapes"…..and…"provides a tool to determine how managers can best prioritize limited resources for stream management by focusing on segments where recommended actions are most likely to have the intended outcome of improving or protecting the biological condition." (pgs 28-29)
- "The approach also leverages information from multiple sources to develop a context for biological assessment that provides an expectation of what is likely to be achieved based on current land use development." (pg 29)
- "The availability of geospatial and bioassessment data at the national level suggests that these tools can easily be applied to inform management decisions at other locations where altered landscapes may limit biological integrity." (Abstract)

As part of this work effort, SCCWRP worked with a local stakeholder group from the San Gabriel River watershed to evaluate how the model results could be used to identify and prioritize local management decisions based on the biological expectation of the stream segments. The scores were used to determine the applicable management response given the constraints on the segment and expected biological condition. For example:

- "….most of the sites in the lower watershed [highly modified] scored within their expected ranges [from the modeling effort], and were therefore, given a low priority for restoration." (pg 2)
- "In contrast, two low-scoring sites in the undeveloped upper watershed were prioritized for causal assessment and possible future restoration, whereas the three high-scoring sites were prioritized for protection." (pgs 2-3)

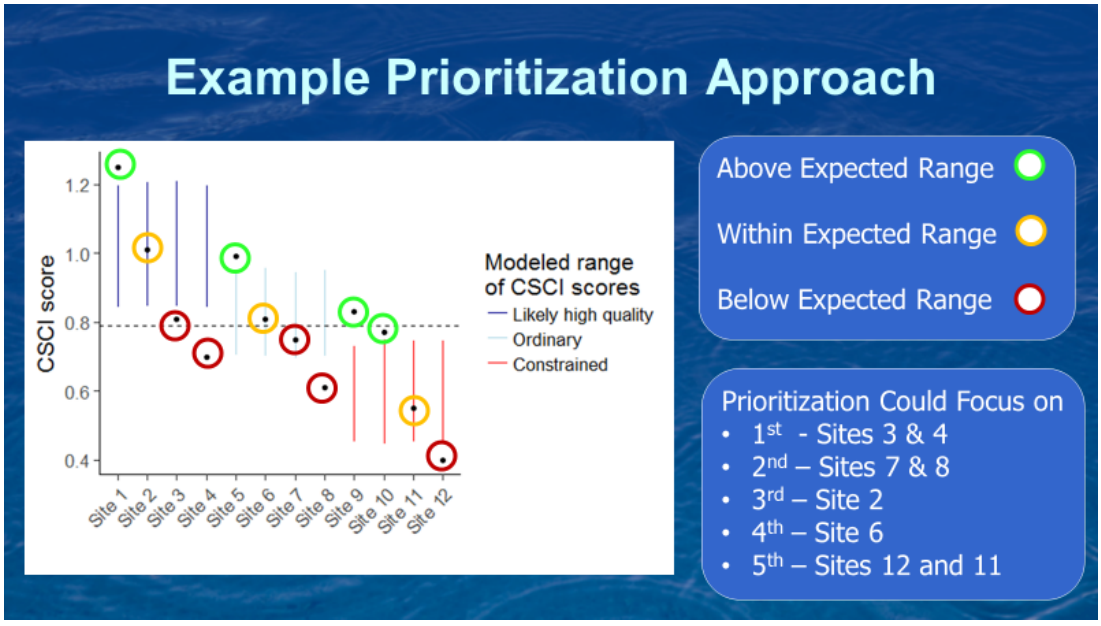
However, rather than considering application of the Channel in Developed Landscape Model to determine feasibility of complying with the proposed Stream Biological Objective, the Draft Staff Report (Appendix 2) appears to only consider use of the Model within the context of the *Tiered Aquatic Life Use (TALU) or Biological Condition Gradient (BCG) Alternative* (Alternatives Analysis, Section 1.8.5), which is rejected as an alternative. Some of the rationale used for this rejection includes the following:

- "No thresholds for determining beneficial use impairment would be established using the California Stream Condition Index." [CASQA disagrees - in fact, the Model can be used to set ranges of biological expectation for a variety of stream conditions]
- "The Antidegradation-Only Alternative does not provide a mechanism for using Biological Objectives for the restoration of currently impaired waters." [a modified alternative could use the Model results as a way to prioritize where restoration would be of highest value]

[12] Beck, M. W., RD Mazor, S Johnson, K Wisenbaker, J Westfall, PR Ode, R Hill, C Loflen, M Sutula, ED Stein. In Review. Prioritizing management goals for stream biological integrity within the developed landscape context. Submitted to Freshwater Science

- "While this approach could potentially reduce impacts associated with some methods of compliance by setting lower standards for certain streams (therein not requiring compliance measures be implemented) the TALU/BCG Alternative is not the preferred alternative for the reasons set forth below." [CASQA disagrees – the Model could be used to set ranges of biological expectation for a variety of stream conditions that should be met and would require measures to be implemented if they were not met]
- "The TALU/BCG Alternative assumes that stream systems can never improve over time, and disregards the adaptive MEP framework in existing municipal storm water permits and non-regulatory efforts from other entities to promote and allow for in-stream habitat restoration" [CASQA fundamentally disagrees with this conclusion and submits that the viability of these alternatives has not been fully considered]
- "…the determination of each stream's individual expectations across the San Diego Region would need to rely on modeling efforts or extensive monitoring for each stream, followed by a formal regulatory-process determination of the "best attainable" condition for each stream." [The modeling work that has been completed to date concluded that the tools that are currently available can be easily applied to help inform management decisions]

CASQA does not agree with these conclusions. Rather, CASQA contends that the SCCWRP Manuscript demonstrates how the model and BCG can reasonably be used within a large geographic area to identify potential constraints on the biological expectation of stream segments, the expected range of biological integrity for stream segments, and support prioritized decisions for stream management. As a part of the State's Biostimulatory/Biointegrity Process, the stakeholder advisory group received a presentation from SCCWRP, who evaluated the use of the model to help characterize stream sites (as likely high quality, ordinary, constrained) and set priorities. The example below demonstrates that if the 0.79 CSCI score is used absent context about the possible constraints, the focus of the prioritized actions would likely be on sites 9-12, when it should, perhaps be focused on the likely high quality and ordinary waters that are lower performing (sites, 3-4 and 7-8, respectively).



By limiting consideration of the use of the Model, the Draft Staff Report misses the Model's actual potential and critical need for use within the biological objectives context. In fact, the Model could be used to support alternative approaches for implementing the proposed Stream Biological Objective, and such alternatives would be entirely consistent with the Regional Water Board's mission to protect, restore, and enhance conditions in waterbodies. For

example, as noted within Comment #2, the Stream Biological Objective could be applied through a phased approach whereby the 0.79 CSCI score is first applied to waterbodies that may actually achieve reference while the Model is used to identify the range of biological expectation for channels in developed landscapes so that they may be prioritized based on their expected biological condition.

This approach would support an effective use of resources to protect/improve the biological condition in all waters while recognizing that the highest attainable condition is not the same for every waterbody. It would also help to prioritize management actions on waterbodies.

CASQA Recommendation:

- *The Regional Water Board should use the SCCWRP Channel in Developed Landscapes Model to identify those waterbodies within the San Diego Region that are likely high quality, ordinary, and constrained.*
- *Given the range of variables that may impact the benthic macroinvertebrate community within a water body segment, the Regional Water Board should consider the use of a range of biological expectations (with a lower bound, median and upper bound) for water bodies instead of a "bright line" 0.79 CSCI score.*
- *Chapter 4 of the BPA should be revised to recognize the prioritization of management actions in order of:*
  - *Likely high quality waters that are below expected range;*
  - *Ordinary waters that are below expected range;*
  - *Likely high quality waters and ordinary waters that are within expected range; and*
  - *Constrained waters that are below and within expected range.*

Comment #8. The Proposed BPA should provide more clarity regarding the use of Causal Assessments, the effectiveness and limitations of such assessments in determining causal factors, and how the information that is generated from them would be used, depending on the range of plausible outcomes.

As a part of Chapter 4 (Implementation Plan), the Proposed BPA discusses the use of rapid causal assessment methods (see Comment #11) as well as the use of EPA's Causal Analysis/Diagnosis Decision Information System (CADDIS). In general, it is unclear when the Regional Water Board would propose the use of the rapid causal assessment methods versus EPA's CADDIS-based approach, the limitations of the methodologies, timing of performing a causal assessment in relationship to establishing an effluent limitation, and how multiple stressors would be addressed within the regulatory framework. In addition, CASQA is concerned that the approach, as currently written within the Proposed BPA, may oversimplify the ability of causal assessments to identify a singular and/or clear cause for a lowered CSCI score.

For example, through the State Water Board's Biostimulatory/Biointegrity Process, SCCWRP developed a Causal Assessment Evaluation and Guidance Document for California[13] that included four case studies (Garcia River,[14] Salinas River,[15] San Diego River,[16] and Santa Clara River[17]). Some of the key lessons learned from the case studies are as follows:[18]

- "In [the] four test cases, we identified a subset of candidate causes, albeit with varying degrees of confidence. Equally as important, we identified several unlikely candidate causes, enabling stakeholders to bypass non-issues and focus follow-up work on candidate causes of greatest importance." (pg.viii)

[13] http://ftp.sccwrp.org/pub/download/DOCUMENTS/TechnicalReports/750_CausalAssessmentGuidance041515wCov.pdf
[14] https://www.waterboards.ca.gov/plans_policies/docs/biological_objective/app_a_garcia.pdf
[15] https://www.waterboards.ca.gov/plans_policies/docs/biological_objective/appb_salinas.pdf
[16] https://www.waterboards.ca.gov/plans_policies/docs/biological_objective/appc_sandiego.pdf
[17] https://www.waterboards.ca.gov/plans_policies/docs/biological_objective/appd_santaclara.pdf
[18] file:///C:/Users/Mom%20and%20Dad/Downloads/0750_CausalAssessGuide_Abstract.pdf

- "However, some candidate causes were left undiagnosed when insufficient, uncertain, or contradicting evidence emerged. Subsequently, iterative steps in diagnosing and confirming candidate causes will likely result, especially where multiple stressors can result in cumulative impacts." (pg viii)
- "There are at least three important considerations when adapting CADDIS to California.
    - First is selecting appropriate comparator sites. Comparator sites are a key ingredient of the Causal Assessment approach. They enable the comparison of data relevant to candidate causes between the impacted site of interest (the test site) and a site with higher quality condition. The traditional localized (i.e., upstream-downstream) approach to selecting comparator sites met with limited success in California, largely because of the ubiquitously altered watersheds in our four test cases.
    - Second is the distinction between evaluating data from within the case versus data from elsewhere. Data from within the case provides the primary lines of evidence for evaluating candidate causes (i.e., spatial/temporal co-occurrence, stressor-response from the field). Data from outside the case provides context for interpreting these primary lines of evidence, such as ensuring concentrations are high enough to induce biological effects (stressor-response from other field studies or from the laboratory). When comparator sites are inadequate for revealing meaningful lines of evidence from within the case, such as in our case studies from California, data from outside the case still provided the necessary information for evaluating candidate causes. Therefore, additional work to develop new assessment tools such as species sensitivity distributions, tolerance intervals, dose-response studies, relative risk distributions, or in-situ stressor response curves will dramatically improve the utilization of data from elsewhere.
    - The third important consideration is summarizing the case. Often times, this may be the only piece of documentation that managers will ever see. Incorporating the myriad of data analytical results for the numerous lines of evidence can be overwhelming. Narrative summary tables are used herein for our four case studies, which can be very descriptive and are consistent with CADDIS guidance. However, the narrative summaries lack much of the quantitative attributes stakeholders would prefer when making important decisions, so future efforts should develop methods or approaches for providing certainty in the diagnostic outcome." (pgs viii-ix)
- "Currently, Causal Assessments are not necessarily simple or straightforward. It must be recognized that there is a learning curve associated with implementation of any new process." (pg ix)

CASQA Recommendation:

- *The Regional Water Board should clarify when rapid causal assessment methods would be used versus EPA's CADDIS-based approach, identify the limitations of the methodologies, explain how the resulting information would be used, and explain how multiple stressors, would be prioritized and addressed within the regulatory framework.*

Comment #9. The Proposed BPA does not seem to contemplate how the permittees and other stakeholders would need to work together in order to assess and affect watershed-wide change.

According to Chapter 4 of the Proposed BPA (Implementation Plan), it appears that each permittee (Phase I Municipal Stormwater permittees, owners and operators of commercial agricultural operations, dredge and fill material dischargers subject to a CWA §401 certification and/or WDRs, and/or enrollees under regional or statewide General Permits) would be required to implement the following:

- Conduct Receiving Water Biological Assessments (V.A.2);
- Monitor and Assess discharges as well as receiving waters (V.B.4); and
- Implement control measures where the permittee is found to be causing or contributing to a decreased CSCI score.

Rather than requiring each permittee to conduct all of the above, CASQA recommends that the Proposed BPA include an approach that allows for watershed-based assessment, collaboration, and implementation among all parties and not just through the Water Quality Improvement Plans (WQIPs). Such an alternative is necessary considering the limited resources of each of the permittees, and the need to not duplicate efforts. Moreover, it makes practical and technical sense to work within a watershed-wide scale to understand the issues and constraints such that implementation efforts can affect change within watershed to achieve the desired outcome. Without this type of coordinated approach, CASQA is concerned that individual efforts attempting to bring receiving waters into attainment with the biological objectives will be unsuccessful.

CASQA Recommendation:

- *Revise the approach for monitoring, assessment, and implementation to be watershed-based to promote collaboration and coordination between the Regional Water Board and permittees.*

Comment #10. The compliance determination language is unclear and inconsistent with other BPA language (such as the ability to use the alternative compliance option) and should be structured so that it is clear what the compliance pathways are for the range of permittees and scenarios that may occur with the Stream Biological Objective.

The Proposed BPA states that the Regional Water Board will determine compliance with the Stream Biological Objective using a "comparator site approach," which is defined as a comparison of the biological condition of the receiving water to the biological condition of the receiving water uninfluenced by the discharge. The compliance determination section is within the Permitting section; thus, for CASQA's members, it identifies how the Regional Water Board will determine compliance with the proposed Stream Biological Objective for stormwater permittees. CASQA's concerns are as follows:

- There is no defined methodology for the "comparator site approach" including, but not limited to, (1) the timeframe for this analysis; (2) the number of data points needed; (3) need for analysis to be conducted for every discharge location; (4) deeming two reaches of receiving waters similar for the purposes of the analysis such that the only modified variable is the discharge into the receiving water; and, (5) determining the driving cause behind the decreased CSCI score (compared to information from a causal assessment/stressor identification analysis).
- As currently expressed in the Proposed BPA, if the results of the comparator site approach indicate that discharge to a site is related to the decreased CSCI score, the Permittee would be "out of compliance" with the permit. Given the complexity of biological systems, this approach could result in a Permittee being deemed out of compliance with its permit even though the receiving water may not be meeting the Stream Biological Objective due to multiple reasons and/or the attainment of the Stream Biological Objective can only occur through long-term, watershed-based improvements. This approach appears to be inconsistent with the Regional Water Board's intent considering that that the Draft Staff Report recognizes that achievement of the Stream Biological Objective may take long-term efforts[19]
- This section of the Proposed BPA includes other sections "Determining when there is an Exceedance of the Stream Biological Objective," "Determining when Further Investigation of a Potential Exceedance is Required," and "Process for Conducting Biological Objective Evaluation." However, it is unclear how these sections relate to one another as well as how the information developed as a part of causal assessments would be considered within this framework.

[19] . "Restoration of waters where long-term historic land use decisions have restricted the ability for current discharges to meet the Stream Biological Objective will require long-term incremental improvement through existing implementation programs." (pg.73, Draft Staff Report)

- This section does not include recognition or language from section VI.A, which indicates that "Phase I MS4 Dischargers may elect to comply with receiving water limitations and prohibitions using the "alternative compliance pathway option" in the Phase I MS4 Permit.

CASQA Recommendation:

- *The Regional Water Board should reevaluate this section and define a step-wise process that would be used to determine if a regulated party's discharge is causing or contributing to a decreased CSCI score and how that information would be used to determine permit compliance.*

Comment #11. The Proposed BPA should include definitions for the terms that are used, identify how they are related to one another (where applicable), and specify what technical analyses would be used to satisfy a requirement (where applicable).

The Proposed BPA introduces several new terms and/or references technical analyses that need to be completed without clearly identifying the established methodologies that should be used to satisfy the requirement. The requested clarification applies to the following terms:

- **Seasonal Streams**

  Seasonal streams are defined within the Proposed BPA, Chapter 3 as "freshwater streams that are expected to be inundated with flowing water for at least four weeks between the months of February and October, except during periods of atypical or extreme drought. Seasonal streams have sufficient flows to conduct bioassessment sampling for stream aquatic benthic macroinvertebrates in most years. Seasonal streams do not include those streams that only exhibit ephemeral flow, which is flow that occurs only during or immediately following (e.g. 24-48 hours) rainfall events."

  Seasonal Streams vs. Intermittent Streams

  It is unclear why the Regional Water Board is establishing a new term "seasonal streams" instead of using the more common term "intermittent streams", what the differences are between the two terms, and if there is a direct relationship between "seasonal streams" and the use of "intermittent streams" to establish the technical basis for the application of the proposed objectives. In fact, these terms seem to be used interchangeably and/or in concert with one another throughout the Draft Staff Report. Examples include, but are not limited to, the following [emphasis added]:

  - Section 4.1 Introduction – Footnote #2 "This includes perennial streams that flow year-round and intermittent streams that may flow from a few weeks to months during a typical rainfall year…"
  - Section 4.5 Applicable Waterbodies
    - "Research by the CSCI's authors (Mazor et al. 2014, Mazor, Rehn, and Stein in Mazor et al. 2015, Figure 9, Figure 10) that occurred up to and simultaneous to the CSCI's publication found that the CSCI and sampling protocols overwhelmingly work for seasonally intermittent streams in the San Diego Region."
    - "Thus, both perennial and regularly seasonal intermittent streams can be sampled for the CSCI."
  - Figure 9 – "Comparison of CSCI distributions at perennial and intermittent (nonperennial) reference sites in the San Diego Region (R9) and for perennial reference sites across southern California. CSCI scores showed no bias against intermittent streams."

  Atypical and Extreme Drought

  As noted above, the definition of seasonal streams also mentions the "periods of atypical or extreme drought." However, the Proposed BPA does not define "typical," "atypical," or "extreme drought" water

years or explain the temporal extent that such an analysis would cover and/or the frequency of a re-evaluation for each of the waterbodies. For example, does the declaration of a water year type occur on an annual basis or should it occur on a multi-year basis and take into account the necessary time that it takes for an ecological system to recover from an "extreme drought?"

It should also be noted that the Draft Staff Report (Section 4.5) recognizes concerns regarding the use of the CSCI scores for these types of streams "On-going research into the suitability of the CSCI to accurately predict reference condition at so-called "sporadically intermittent" or "atypically intermittent" stream sites is underway in the San Diego Region, and is targeting streams that lack surface flows except during years with above to well above average rainfall (e.g. 2011, 2017, see Figure 13). Initial results indicate the CSCI may work for such streams (Loflen, unpublished data), but potential limitations on feasible regulatory implementation associated with a limited sampleability period needs to be resolved."

Ephemeral vs. Seasonal

CASQA has several concerns with the definitions of "seasonal" and "ephemeral" streams, and the differences between them. The rainfall variability within California means that what is considered an intermittent/seasonal surface water and what is an ephemeral surface water is not easily determined. Although the definition of seasonal appears to be based on a definition of a "typical year" it is not clear how this would be determined (what timeframe would be used) or how often the analysis of whether a waterbody is seasonal would have to be completed. As a result, this could be a significant amount of work for the stormwater permittees and could lead to certain water bodies coming in and out of these definitions on a year-to-year or other short-term basis. If, in fact, the classification of the water bodies was modified frequently (more than once every five years, for example), the ability of the permittees to prioritize, plan, and implement meaningful control measures would be severely compromised.

It is unclear how, absent rain and flow gauges being installed on every waterbody in multiple places, a permittee would know when a "seasonal' waterbody should be monitored in order to obtain an accurate, representative CSCI score. The Draft Staff Report notes "Mazor et al. 2015 used and recommends a minimum 4-week sampling delay period from the onset of stream flow and/or from the last major storm 're-setting' event"[20] and "State of California methods require sampling be carried out at least two, and preferably, three weeks after any storm event that has generated enough stream power to mobilize cobbles and sand/silt capable of scouring stream substrates (Ode et al. 2016b)."[21] Further, Table 4 within the Draft Staff Report identifies typical sampling periods that may be used for different types of streams, however there is no corresponding definition for "typical year", "dry year", or "wet year".

Thus, in order to obtain accurate and representative data, it is critical that the stream section be monitored during the appropriate timeframes.

CASQA Recommendation:

- *Clarify what the difference is between "seasonal streams" and "intermittent streams" and if the technical basis for using intermittent streams applies equally to seasonal streams.*
- *Define "typical," "atypical," and "extreme drought" water years and clarify the temporal extent and frequency of this determination.*
- *Define "dry year" and "wet year" water years and clarify the temporal extent and frequency of this determination.*

[20] Draft Staff Report, page 56
[21] Draft Staff Report, page 56

- *Clarify the Regional Water Board's expectation as to how a permittee should determine if a water body is perennial, seasonal, or ephemeral if there are no rain or stream gauges currently installed on the water body.*
- *Clarify that any determination of water body types or water years is based on readily available data.*
- *Remove "seasonal streams" from the types of waterbodies that the Stream Biological Objective applies to until there is clarity on how the issues above would be addressed*.

- **Probable Threat**

  Probable Threat vs. Cause or Contribute

  The Proposed BPA uses the term "probable threat" throughout Chapter 4. Although it appears that the term is defined as "if the discharge is or has the potential to cause or contribute to a decrease in the CSCI score in the receiving water or downstream waters as identified in the ROWD or determined by the San Diego Water Board," there is no description as to the methodology and temporal or spatial data that would be used to make this determination.

  It is also unclear why this new term is needed, when it seems to embody the term and general approach that is used to determine if a discharge is "causing or contributing" to an exceedance of water quality objectives. This language goes beyond the "cause or contribute" language and will result in confusion as to how this is demonstrated without a clear linkage to stream health.

  Blanket Determination that Phase I Permittees are Deemed a Probable Threat

  The Draft Staff Report (page 78) states that "….Phase I discharges have already been determined by the San Diego Water Board to represent a probable threat to the Stream Biological Objective." To support this statement, the Draft Staff Report then provides a general reference to the findings and fact sheet for Order R9-2013-0001. However, it is unclear what findings and portions of the fact sheet this statement is referencing since there are no citations. Besides this reference, the Draft Staff Report fails to include any supporting analysis or information to support this finding of probable threat. Without additional information, the Regional Water Board has abused its discretion because the findings are not supported by the evidence. (See, *Asociacion de Gente Unica por el Agua v. Central Valley Regional Water Quality Control Bd.* (2012) 210 Cal.App. 4th 1255, 1281.)

  Based on the limited information provided, it is unclear what (if any) biological and corresponding causal assessments were conducted throughout the San Diego Region to support a finding of this magnitude. Further, no information is provided to support the Regional Water Board's overarching conclusion that all 21 of the San Diego County Copermittees, all 12 of the Orange County Copermittees, and all 5 of the Riverside County Copermittees are causing or contributing to a depressed CSCI scores within their local waterbodies.

  Immediate Non-Compliance with Receiving Water Limitations

  In addition, since the Regional Water Board has indicated that the Stream Biological Objective will be applied as a receiving water limit[22], by making the blanket determination that the Phase I municipal stormwater permittees are a probable threat within the Draft Staff Report, the Regional Water Board places the municipal stormwater permittees in immediate non-compliance with the Receiving Water Limitations of the Regional Phase I MS4 Permit once the Stream Biological Objective is effective.

  CASQA Recommendation:

  - *Delete the term "probable threat" and, instead, use the more common term within existing municipal stormwater NPDES permits "cause or contribute."*

[22] Draft Staff Report, Section 5.3.2

- *Identify the process used and data and information necessary for making a cause or contribute determination for the Stream Biological Objective.*
- *Delete the determination that the Phase I permittees represent a probable threat to meeting the Stream Biological Objective.*
- *Within the Chapter 4 Table (TBD) Time Schedule for Implementation of Stream Biological Objective, revise the approach used for Regional Phase I MS4 Permit to be the consistent with the other permittees and add the language "Within 5 years after the effective date of the Stream Biological Objective, the San Diego Water Board will evaluate the causal assessments and Regional Phase I MS4 permittee data to determine if the discharge(s) are causing or contributing to an exceedance of the Stream Biological Objective."*

- **Rapid Causal Assessment Methods**

The Draft Staff Report states that rapid causal assessment methods may be used for a wide range of analyses including cause or contribute assessments (pg. 82), evaluation and prioritization of stream segments (pg. 83), 303(d) listing and de-listing processes (pg. 86), identification of potential mitigation sites (pg. 93), assess sources relative to discharges associated with agricultural activities (pg. 96), and source identification monitoring (pg. 103). However, it is unclear what the referenced rapid causal assessment methodologies are, how the methodologies should be applied, and results interpreted for each of the above-mentioned analyses, and if they have been formally peer reviewed and tested for that application. The Draft Staff Report (Appendix 2) states "several agencies have developed rapid causal assessment tools…that work on a site-specific basis at much lower costs than the traditional EPA CADDIS approach (City of San Diego 2015b[23], SCCWRP 2016[24], Gillet et al. under review)." (pg. 119). It is unclear if the rapid assessment methodologies have been completed and to what extent they have been used for a wide range of pollutants within California or elsewhere.

The Proposed BPA discusses the role of "rapid causal assessment methods" in the following sections:

- Chapter 4 – III.B "The San Diego Water Board may use **rapid causal assessment methods** for water segment assessment, as well as for evaluating a water segment's recovery potential, developing timeframe(s) for potential restoration targets, and selecting potential restoration methods and mitigation measures." (Proposed BPA, pg. 7, emphasis added.)
- Chapter 4 – Footnote 16 "**Rapid causal assessment**, physical in-stream habitat modeling, and traditional stressor identification methods may be used for the impact evaluation. Formal EPA causal assessment (i.e. CADDIS) is generally not appropriate for use in permit impact evaluations and is not required." (Proposed BPA, pg. 14, emphasis added.)

Although rapid causal assessment seems integral to the monitoring and assessment component of the Stream Biological Objective, the Proposed BPA fails to include or provide detail regarding the expected rapid causal assessment methodologies that should be used. Rather, CASQA understands that these assessment methods are currently under development. Prior to use and application of any such methods in a regulatory process, the rapid causal assessment methods need to be subject to public review and comment as well as peer review.

CASQA Recommendation:

- *Identify the specific rapid causal assessment methods that would be used within the monitoring and assessment components of the biological objectives.*

[23] Synthetic Pyrethroids Causal Assessment for the San Diego River.

[24] Thematic Research Plan for Bioassessment

- *Identify how the rapid causal assessment methods should be applied and interpreted for use in cause or contribute assessments, evaluation and prioritization of stream segments, 303(d) listing and de-listing processes, identification of potential mitigation sites, assessment of sources relative to discharges associated with agricultural activities, and source identification monitoring.*
- *Circulate the methods for public review and comment and ensure that the methods are widely applicable to a broad range of pollutant classes, have been subject to peer review, and make publicly available the results of the peer review.*

- **Pollution**

  The Proposed BPA defines the term "pollution" in Chapter 4, Section III.C footnote 9 (page 7) as "the man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water, e.g. a dam or channel hardening" and cites CWA § 502(19). However, the term "e.g. a dam or channel hardening" does not appear within CWA § 502(19). Further, the term pollution is defined in California law to mean "… an alteration of the quality of the waters of the state by waste to a degree which unreasonably affects either of the following: (A) The waters for beneficial uses. (B) Facilities which serve these beneficial uses. …." (CWC §13050(l)(1).) Under its NPDES authority, the Regional Water Board has the authority to issue permit restrictions and requirements on point sources that discharge a pollutant to a water of the U.S. NPDES permits are not used to address conditions of pollution that are not related to the discharge of a pollutant. Similarly, Porter Cologne authorizes the water boards to permit waste discharges, and a pollution condition is one associated with waste. Considering the Regional Water Board's limited legal authorities for addressing conditions of pollution unrelated to a discharge of a pollutant or waste, the Proposed BPA needs to clearly explain its intent with respect to pollution that is unrelated to a discharge of a pollutant or waste. Currently, the Proposed BPA is unclear as to this connection, and does not explain the need for defining pollution in the Proposed BPA itself.

  CASQA Recommendation:

  - *Remove the definition of pollution from the Proposed BPA, or, at the very least, remain consistent with the CWA citation and remove the language "e.g. a dam or channel hardening".*

- **Potential Temporary/Permanent Impact**

  In Chapter 4, Section V.A.2 (Contents of a Receiving Water Biological Assessment), the Proposed BPA includes the term "potential temporary or permanent impacts;" however, these terms are not defined, so it is not clear what the thresholds are to determine if an impact is temporary or permanent and/or what approach or methodology should be used to make this determination.

  In addition, the only place where this terminology appears within the Draft Staff Report is in Section 5.6 Clean Water Act §401 Water Quality Certifications. If this term and analysis is only meant for 401 certifications, this should be clarified within Chapter 4.

  CASQA Recommendation:

  - *The Proposed BPA should define the terms "potential temporary impact" and "permanent impact", clarify which regulated entities must make the determination, and state the approach and methodology for the analysis as well as the thresholds for interpretation of results.*

- **Natural in Origin, Natural Condition, Background Condition**

  The Proposed BPA includes several terms that are not defined and are unclear how they relate to one another [examples include, emphasis added]:

  - Chapter 3 – "However, where the cause of a low CSCI score is **natural in origin**, compliance with the biological objective may be determined using an alternate analytical method approved by the San Diego Water Board..."

- Draft Staff Report (pg 45) – "Anthropogenic modification that results in the unnatural presence of an otherwise naturally occurring factor or stressor that impacts CSCI scores will not be considered "**natural in origin**."

- Chapter 4, III.B – "For water segments where the Stream Biological Objective applies but no CSCI data is available, or if the CSCI data is inappropriate due to **natural conditions**, a water segment will continue to be placed on the 303(d) list in accordance with section 3.9 of the Listing Policy or other applicable sections."
- Chapter 4, V.A.2 – "Discussion of any **natural or background conditions** that may affect the receiving's water's CSCI score (if known)."
- Chapter 4, V.B.2 – "If there is no CSCI score for a receiving water or the use of a CSCI score is inappropriate due to **natural conditions**, the San Diego Water Board will determine probable threat on a case-by-case basis."
- Chapter 4, V.C – "Where the San Diego Water Board has determined that the CSCI is inappropriate due to **natural conditions**, the San Diego Water Board will consider alternative evidence of biological condition…."

With the exception of the brief discussion of "natural in origin" within the Draft Staff Report, there is no discussion or clarification of "natural condition" or "background condition" and there is no clarification or examples given to assist in understanding how these terms are defined and how they relate to one another.

CASQA Recommendation:

- *The Proposed BPA should define the terms "natural in origin", "natural conditions", and "background condition", give examples of what would be considered natural in origin, natural background, or background condition, and how these terms relate to or differ from one another. Note: Until such time as the terms are defined, CASQA cannot provide additional insight or comment as to the use of the terms within the Proposed BPA.*

Thank you again for the opportunity to comment on this Proposed BPA and the proposed Stream Biological Objective. If you have any questions, please contact CASQA Executive Director Geoff Brosseau at (650) 365-8620.

Sincerely,

Daniel Apt, Chair
California Stormwater Quality Association

cc: David Gibson, Executive Officer, San Diego Regional Water Quality Control Board
Jonathan Bishop, Chief Deputy Director, State Water Resources Control Board
Karen Mogus, Deputy Director, State Water Resources Control Board
CASQA Board of Directors
CASQA Executive Program Committee
CASQA Policy and Permitting Subcommittee
Geoff Brosseau, Executive Director, CASQA
Karen Cowan, Assistant Executive Director, CASQA
Steve Weisberg, Executive Director, SCCWRP